



# SEQUENCE LISTING

<110> Ehrhardt, Thomas  
Lerchl, Jens  
Nigel, Marc Stitt  
Zenner, Rita

<120> Plant dihydroorotase

<130> 0050/50716

<140> US 10/070,277

<141> 2002-03-06

<150> PCT/EP00/08581

<151> 2000-09-02

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<213> Solanum tuberosum

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<222> (9)..(1046)

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Leu Arg Asp Gly Asp Val Leu Lys Ala Val Val Ser His Ser Ala His
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cac ttt ggg agg gca ata gtc atg cca aat ttg aag cct cct atc act 146
His Phe Gly Arg Ala Ile Val Met Pro Asn Leu Lys Pro Pro Ile Thr
              35              40              45

acc act gct gct gct gta gca tac cgg gag gcg ata ttg aaa tct tta 194
Thr Thr Ala Ala Ala Val Ala Tyr Arg Glu Ala Ile Leu Lys Ser Leu
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cct gtt gat agt gat ttc aac cct ctt atg aca ctt tat ttg aca gat 242
Pro Val Asp Ser Asp Phe Asn Pro Leu Met Thr Leu Tyr Leu Thr Asp
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gga gtg act gat ctt ttc ggg aag tgt tta cca gtt cta caa gaa atg	386
Gly Val Thr Asp Leu Phe Gly Lys Cys Leu Pro Val Leu Gln Glu Met	
115 120 125	
gtt gag cat aat atg cct ctg ctg gtt cat gga gag gtt act aat cct	434
Val Glu His Asn Met Pro Leu Leu Val His Gly Glu Val Thr Asn Pro	
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Glu Val Asp Met Phe Asp Arg Glu Lys Val Phe Ile Glu Thr Val Leu	
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Arg Pro Leu Val Gln Lys Phe Pro Gln Leu Lys Val Val Met Glu His	
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Val Thr Thr Ile Asp Ala Val Lys Phe Val Glu Ser Cys Thr Glu Gly	
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Phe Val Ala Ala Thr Val Thr Pro Gln His Leu Val Leu Asn Arg Asn	
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Leu Lys Arg Glu Ile His Arg Glu Ala Leu Val Ser Ala Val Thr Ser	
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Gly Ser Lys Arg Phe Phe Leu Gly Thr Asp Ser Ala Pro His Asp Arg	
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Arg Arg Lys Glu Cys Ser Cys Gly Cys Ala Gly Ile Tyr Asn Ala Pro	
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gta gcc ttg tca gta tat gcg aag gtg ttt gaa aag gaa aat gca ctc	866
Val Ala Leu Ser Val Tyr Ala Lys Val Phe Glu Lys Glu Asn Ala Leu	
275 280 285	
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Asp Lys Leu Glu Ala Phe Thr Ser Phe Asn Gly Pro Asp Phe Tyr Gly	
290 295 300	
ctt cct agg aac aac tca aag att aag ttg agt aag acg cca tgg aag	962
Leu Pro Arg Asn Asn Ser Lys Ile Lys Leu Ser Lys Thr Pro Trp Lys	
305 310 315	
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Val Pro Glu Ser Phe Ser Tyr Ala Ser Gly Asp Ile Ile Pro Met Phe	

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Ser	Pro	Met	Glu	Ile	Lys	Leu	Ala	Arg	Glu	Ser	Gln	Val	Val	Phe	Gly
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Asp	Met	Phe	Asp	Arg	Glu	Lys	Val	Phe	Ile	Glu	Thr	Val	Leu	Arg	Pro
145					150					155					160
Leu	Val	Gln	Lys	Phe	Pro	Gln	Leu	Lys	Val	Val	Met	Glu	His	Val	Thr
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Thr	Ile	Asp	Ala	Val	Lys	Phe	Val	Glu	Ser	Cys	Thr	Glu	Gly	Phe	Val
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Phe Gln Gly Gly Leu Gln Pro His Asn Tyr Cys Leu Pro Val Leu Lys  
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Arg Glu Ile His Arg Glu Ala Leu Val Ser Ala Val Thr Ser Gly Ser  
225 230 235 240

Lys Arg Phe Phe Leu Gly Thr Asp Ser Ala Pro His Asp Arg Arg Arg  
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Lys Glu Cys Ser Cys Gly Cys Ala Gly Ile Tyr Asn Ala Pro Val Ala  
260 265 270

Leu Ser Val Tyr Ala Lys Val Phe Glu Lys Glu Asn Ala Leu Asp Lys  
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Leu Glu Ala Phe Thr Ser Phe Asn Gly Pro Asp Phe Tyr Gly Leu Pro  
290 295 300

Arg Asn Asn Ser Lys Ile Lys Leu Ser Lys Thr Pro Trp Lys Val Pro  
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Arg Lys Leu Lys Pro Ser Ser Val Pro Arg His Tyr Cys Thr Ser Ser

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aaa aag gga agg ttg ttt aca gga gcc act att ggt cta cta ata gct	50	55	60	493
Lys Lys Gly Arg Leu Phe Thr Gly Ala Thr Ile Gly Leu Leu Ile Ala				
ggg gga gct tat gca agt acg gtt gat gag gcc acc ttc tgt ggc tgg	65	70	75	541
Gly Gly Ala Tyr Ala Ser Thr Val Asp Glu Ala Thr Phe Cys Gly Trp				
cta ttc tca gca aca aaa cta gta aat ccg ttc ttt gca ttt ctg gat	80	85	90	589
Leu Phe Ser Ala Thr Lys Leu Val Asn Pro Phe Phe Ala Phe Leu Asp				
cca gag gtt gct cac aaa ctg gcg gtc tct gct gca gcc cga gga tgg	100	105	110	637
Pro Glu Val Ala His Lys Leu Ala Val Ser Ala Ala Ala Arg Gly Trp				
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Val Pro Arg Glu Lys Arg Pro Asp Pro Pro Ile Leu Gly Leu Asp Val				
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Trp Gly Arg Arg Phe Ser Asn Pro Val Gly Leu Ala Ala Gly Phe Asp				
aag aat gct gag gct gtt gaa gga ttg ctt gga tta ggt ttt ggc ttt	145	150	155	781
Lys Asn Ala Glu Ala Val Glu Gly Leu Leu Gly Leu Gly Phe Gly Phe				
gtt gag gtt ggc tca gta act ccc att cca cag gaa ggc aac cca aaa	160	165	170	829
Val Glu Val Gly Ser Val Thr Pro Ile Pro Gln Glu Gly Asn Pro Lys				
cca cgt ata ttt agg ttg cca aat gaa ggt gct ata ata aat agg tgt	180	185	190	877
Pro Arg Ile Phe Arg Leu Pro Asn Glu Gly Ala Ile Ile Asn Arg Cys				
ggc ttc aat agt gaa gga atc gtt gtg gtt gcc aaa cga ttg ggt gct	195	200	205	925
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Gln His Gly Lys Arg Lys Leu Glu Thr Ser Ser Thr Ser Ser Pro Ala				
gga gat gaa gtc aag cat gga ggg aaa gct ggt cct ggt att ctt ggt	225	230	235	1021
Gly Asp Glu Val Lys His Gly Gly Lys Ala Gly Pro Gly Ile Leu Gly				
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Val Asn Leu Gly Lys Asn Lys Thr Ser Glu Asp Ala Ala Ala Asp Tyr				

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Lys Gln Leu Lys Asp Leu Val Lys Lys Val Gln Ala Ala Arg Asp Glu	
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Ala Leu Arg Val Asp Gly Leu Ile Ile Ser Asn Thr Thr Val Gln Arg	
340 345 350	
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Ser Gly Lys Pro Leu Phe Asp Met Ser Thr Asn Ile Leu Lys Glu Met	
370 375 380	
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Tyr Val Leu Thr Lys Gly Arg Ile Pro Leu Ile Gly Thr Gly Gly Ile	
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Ser Ser Gly Glu Asp Ala Tyr Lys Lys Ile Arg Ala Gly Ala Thr Leu	
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435 440 445	
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<211> 458

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Phe	Ser	Ala	Thr	Lys	Leu	Val	Asn	Pro	Phe	Phe	Ala	Phe	Leu	Asp	Pro	
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Glu	Val	Ala	His	Lys	Leu	Ala	Val	Ser	Ala	Ala	Ala	Arg	Gly	Trp	Val	
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Asp	Glu	Val	Lys	His	Gly	Gly	Lys	Ala	Gly	Pro	Gly	Ile	Leu	Gly	Val	
225					230				235					240		
Asn	Leu	Gly	Lys	Asn	Lys	Thr	Ser	Glu	Asp	Ala	Ala	Ala	Asp	Tyr	Val	
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 Ile Ser Ser Pro Asn Thr Pro Gly Leu Arg Gln Leu Gln Gly Arg Lys  
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 Gln Leu Lys Asp Leu Val Lys Lys Val Gln Ala Ala Arg Asp Glu Met  
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 Gln Trp Gly Glu Glu Gly Pro Pro Pro Leu Leu Val Lys Ile Ala Pro  
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 Asp Ser Ile Ser Gln Asn Pro Val Ala Gln Glu Ala Gly Gly Leu Ser  
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 Ser Gly Glu Asp Ala Tyr Lys Lys Ile Arg Ala Gly Ala Thr Leu Val  
 405 410 415  
 Gln Leu Tyr Thr Ala Phe Ala Tyr Gly Gly Pro Ala Leu Ile Pro Asp  
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